

IGAC & SOLAS emerging activity

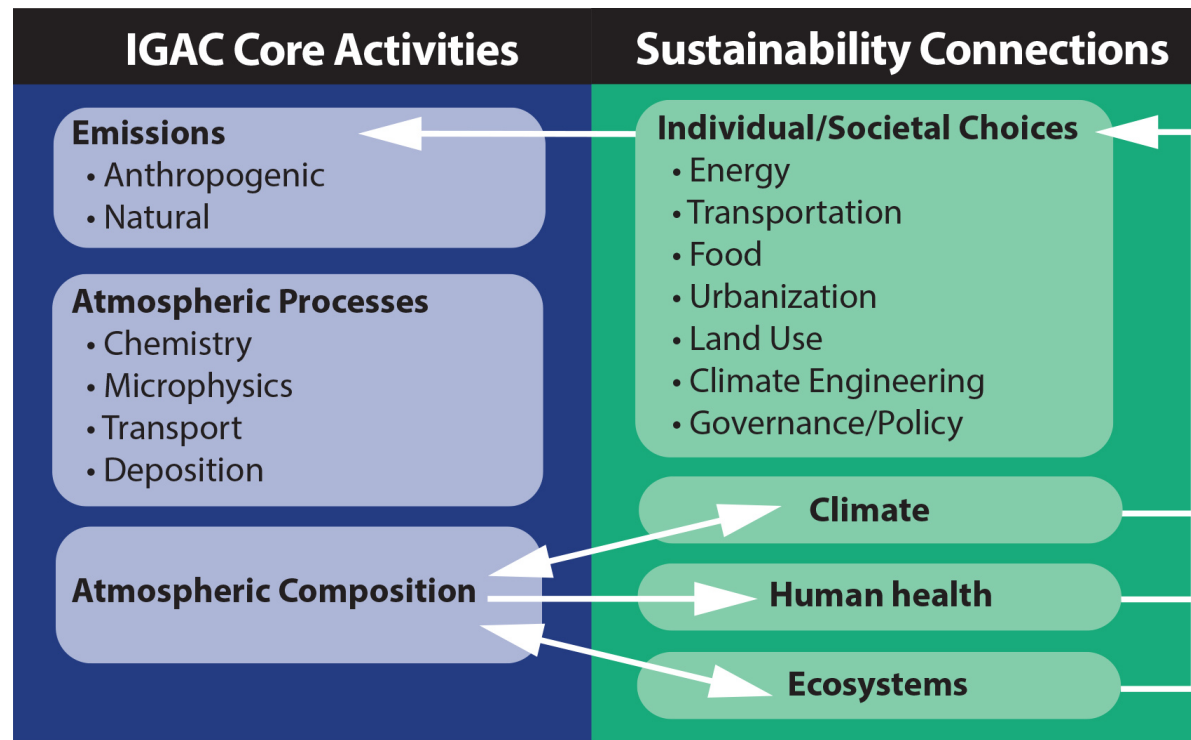
Working title for activity: CATCH – The Cryosphere and ATmospheric CHemistry

Scientists engaged in helping to plan CATCH to date include:

- **Jennie L. Thomas, France**
- Thorsten Bartels-Rausch, Switzerland
- Tom Douglas, USA
- Markus M. Frey, UK
- V. Faye McNeill, USA
- Paul Shepson, USA
- Kerri Pratt, USA
- **Jennifer Murphy, Canada**
- Megan Willis, Canada (early career scientist)
- Jon Abbatt, Canada
- Anna Jones, UK
- Cort Anastasio, USA
- Daiki Nomura,
- Kitae Kim, Korea

How has work on atmospheric-cryosphere interactions been coordinated in the past?

- IGAC - **International Global Atmospheric Chemistry (IGAC)** Project <http://www.igacproject.org>



Past activities sponsored by IGAC: Air Ice Chemical Interactions (AICI)

07 Jul 2008 -- P. S. Anderson

[Boundary layer physics over snow and ice](#)

12 Mar 2008 -- A. Steffen

[A synthesis of atmospheric mercury depletion event chemistry in the atmosphere and snow](#)

16 Jan 2008 -- F. Domine

[Snow physics as relevant to snow photochemistry](#)

22 Aug 2007 -- W. R. Simpson

[Halogens and their role in polar boundary-layer ozone depletion](#)

22 Aug 2007 -- A. M. Grannas

[An overview of snow photochemistry: evidence, mechanisms and impacts](#)

12 Feb 2014 -- T. Bartels-Rausch

[A review of air-ice chemical and physical interactions \(AICI\): liquids, quasi-liquids, and solids in snow](#)

20 Mar 2013 -- A. M. Grannas

[The role of the global cryosphere in the fate of organic contaminants](#)

20 Dec 2012 -- R. Sander

[A compilation of tropospheric measurements of gas-phase and aerosol chemistry in polar regions](#)

24 Oct 2012 -- V. F. McNeill

[Organics in environmental ices: sources, chemistry, and impacts](#)

19 Jul 2012 -- J. P. D. Abbatt

[Halogen activation via interactions with environmental ice and snow in the polar lower troposphere and other regions](#)

Past activities co-sponsored by IGAC:
Ocean - Atmosphere - Sea Ice – Snowpack (OASiS)



Activities – O-Buoy, BROMEX, other activities

Co-chairs - FayeMcNeill, Columbia University and Tom Douglas, CRREL

Past activities co-sponsored by IGAC : Halogens in the Troposphere (HitT)



Special conference sessions (e.g. EGU)

Proposing/planning field campaigns

Workshops

Review papers

What is CATCH?

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- CATCH focuses on processes occurring at **snow and ice interfaces, oceanic surfaces**, as well as **aerosols and clouds** in cold regions.

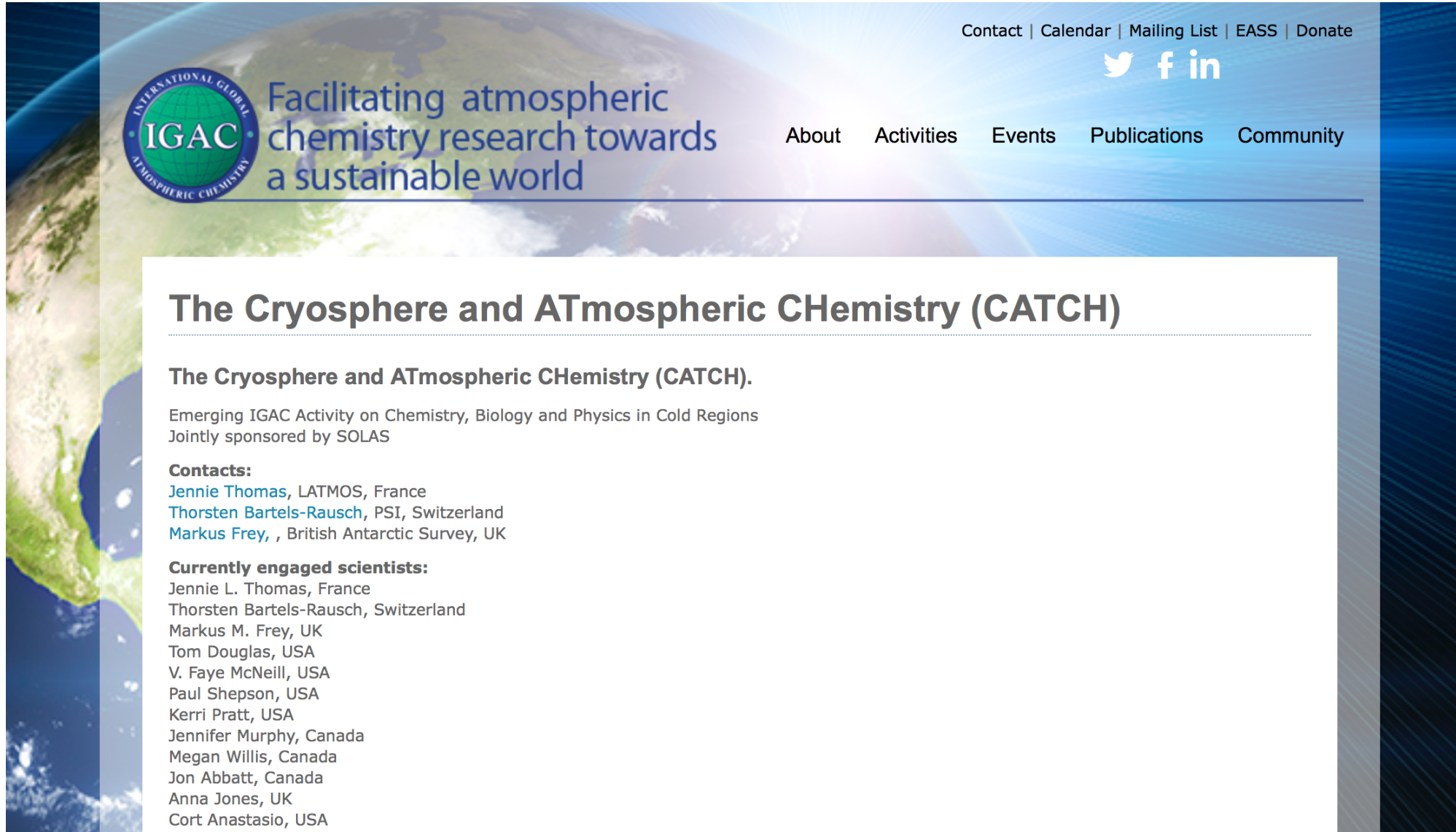
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- + other to be defined areas of research

Shared activities - envisioned

- Ozone cycle & trace gases (shared with IASOA)
- Interactions between natural & pollution processing in the Arctic (shared working group with PACES)
- Atmospheric chemistry & ice cores (shared working group with PAGES)
- Atmospheric chemistry and the polar oceans (shared working group with SOLAS)
- Cryospheric change & atmospheric chemistry (shared with CLiC)
- The influence of sea ice on atmospheric chemistry (shared with BEPSII)

Where can you learn more about CATCH?

The image is a screenshot of the IGAC CATCH website. The background features a satellite view of Earth. At the top left is the IGAC logo, a green globe with 'INTERNATIONAL GLOBAL' at the top, 'IGAC' in the center, and 'ATMOSPHERIC CHEMISTRY' at the bottom. To the right of the logo is the text 'Facilitating atmospheric chemistry research towards a sustainable world'. In the top right corner, there are links: 'Contact | Calendar | Mailing List | EASS | Donate' and social media icons for Twitter, Facebook, and LinkedIn. Below these are navigation links: 'About | Activities | Events | Publications | Community'. The main content area has a white background with a blue border on the left and right. It features a title 'The Cryosphere and ATmospheric CHEmistry (CATCH)' followed by a subtitle 'The Cryosphere and ATmospheric CHEmistry (CATCH)'. Below the subtitle is a paragraph: 'Emerging IGAC Activity on Chemistry, Biology and Physics in Cold Regions' and 'Jointly sponsored by SOLAS'. Then there is a 'Contacts:' section with three names: 'Jennie Thomas, LATMOS, France', 'Thorsten Bartels-Rausch, PSI, Switzerland', and 'Markus Frey, British Antarctic Survey, UK'. Finally, there is a 'Currently engaged scientists:' section with a list of names: 'Jennie L. Thomas, France', 'Thorsten Bartels-Rausch, Switzerland', 'Markus M. Frey, UK', 'Tom Douglas, USA', 'V. Faye McNeill, USA', 'Paul Shepson, USA', 'Kerri Pratt, USA', 'Jennifer Murphy, Canada', 'Megan Willis, Canada', 'Jon Abbatt, Canada', 'Anna Jones, UK', and 'Cort Anastasio, USA'.

[Contact](#) | [Calendar](#) | [Mailing List](#) | [EASS](#) | [Donate](#)



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The Cryosphere and ATmospheric CHEmistry (CATCH)

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Emerging IGAC Activity on Chemistry, Biology and Physics in Cold Regions
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Draft CATCH mission and vision statements

Mission (why we exist)

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Vision (desired outcome)

CATCH scientists aim to understand and predict:

- How physical, chemical, biological, and ecological changes in sea ice and snow impact atmospheric chemistry
- How atmosphere-ocean interactions determine atmospheric chemistry
- Feedbacks between climate change and atmospheric chemistry that are determined by changes in the cryosphere
- How aerosols are formed and processed in cold regions
- How aerosols in cold regions act as cloud precursors and impact cloud properties
- How the ice core records can be used to understanding global and local environmental change
- How background composition/chemistry (trace gases and aerosols) in cold regions influences the fate of pollution (joint objective with PACES)

Scientists will achieve this by devising strategies to cooperate in the field, lab, and via modeling

How to engage – provide input for the mission/vision for CATCH

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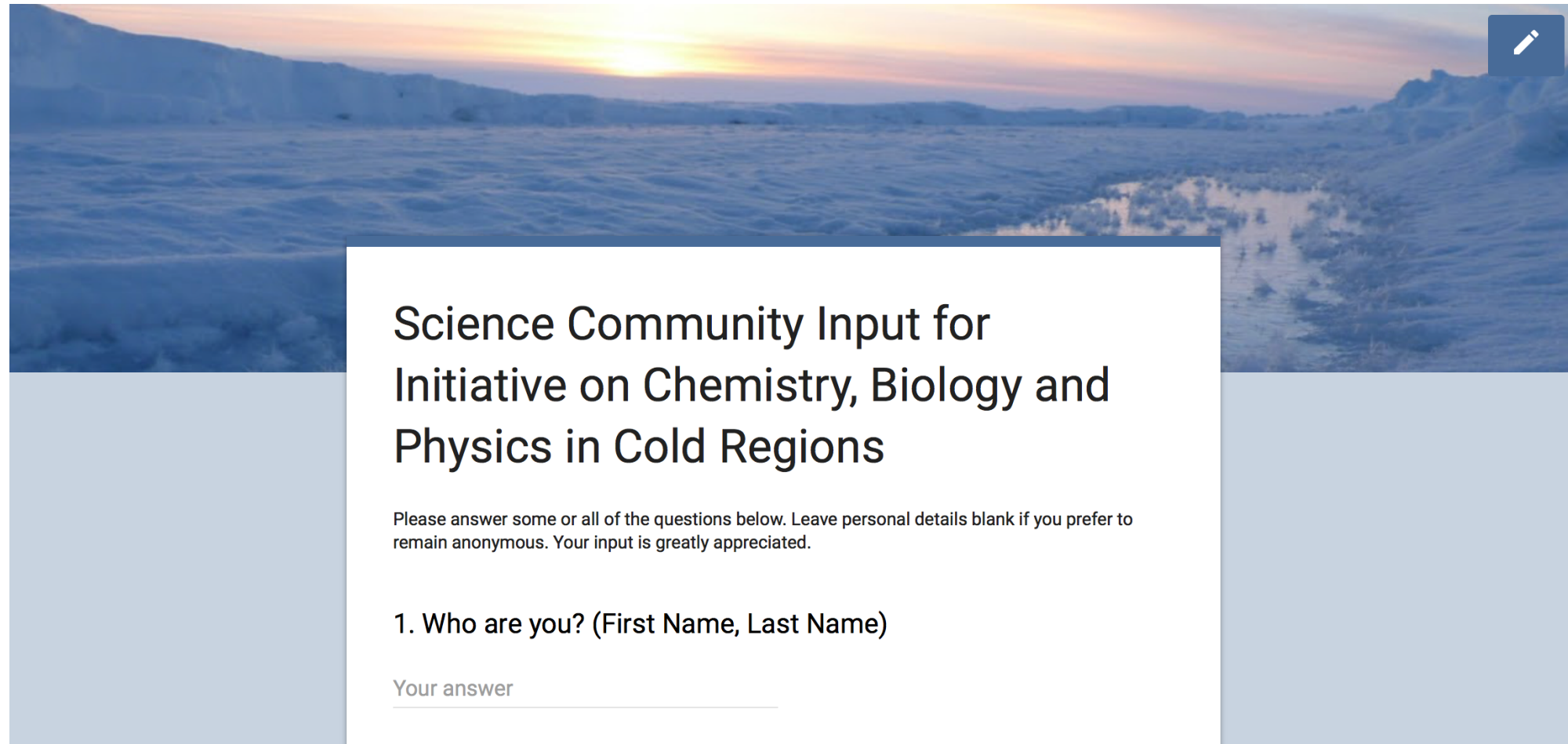
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How to engage – CATCH is currently seeking community input



Science Community Input for
Initiative on Chemistry, Biology and
Physics in Cold Regions

Please answer some or all of the questions below. Leave personal details blank if you prefer to remain anonymous. Your input is greatly appreciated.

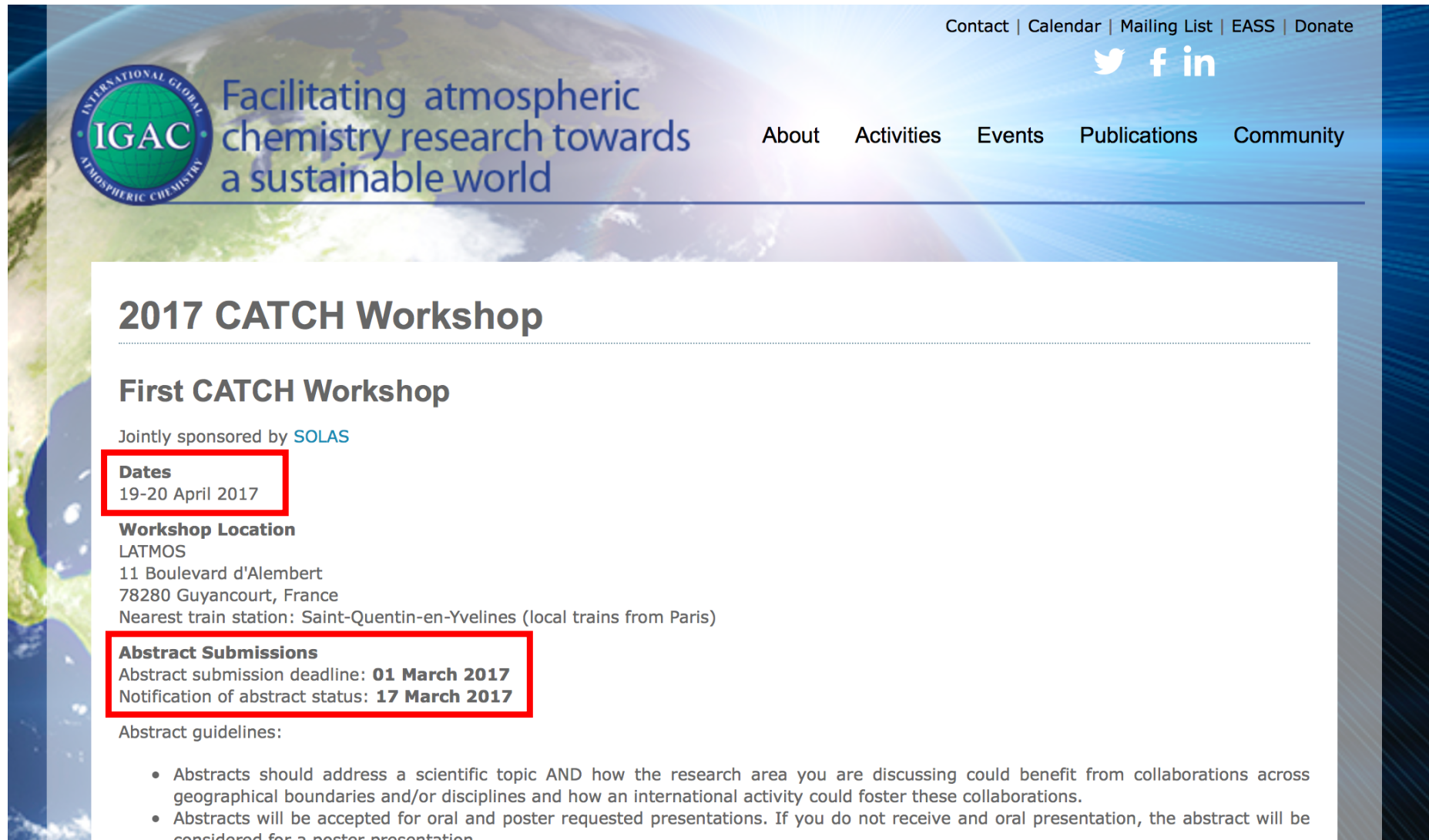
1. Who are you? (First Name, Last Name)

Your answer

<http://tinyurl.com/jd4t9sy>

How to engage – attend the first CATCH community workshop

19-20 April near Paris, France



The screenshot shows the IGAC website header with the logo and tagline "Facilitating atmospheric chemistry research towards a sustainable world". Navigation links include "Contact", "Calendar", "Mailing List", "EASS", "Donate", "About", "Activities", "Events", "Publications", and "Community". Social media icons for Twitter, Facebook, and LinkedIn are also present.

2017 CATCH Workshop

First CATCH Workshop

Jointly sponsored by [SOLAS](#)

Dates
19-20 April 2017

Workshop Location
LATMOS
11 Boulevard d'Alembert
78280 Guyancourt, France
Nearest train station: Saint-Quentin-en-Yvelines (local trains from Paris)

Abstract Submissions
Abstract submission deadline: **01 March 2017**
Notification of abstract status: **17 March 2017**

Abstract guidelines:

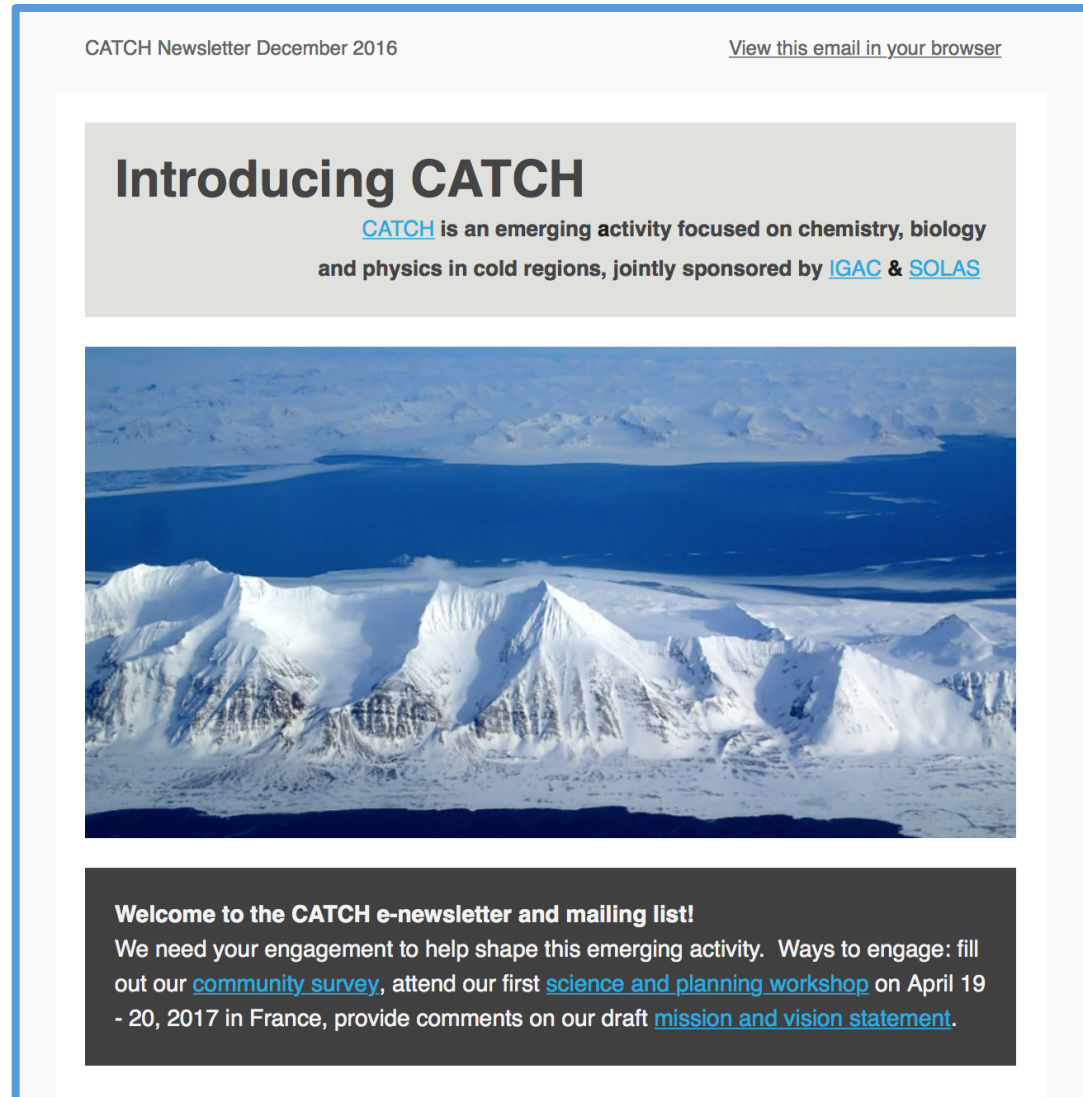
- Abstracts should address a scientific topic AND how the research area you are discussing could benefit from collaborations across geographical boundaries and/or disciplines and how an international activity could foster these collaborations.
- Abstracts will be accepted for oral and poster requested presentations. If you do not receive and oral presentation, the abstract will be considered for a poster presentation.

How to engage – attend the first CATCH community workshop

Workshop science themes

- How physical, chemical, biological, and ecological changes in sea ice and snow impact atmospheric chemistry
- How does microbiology (microbes, ice algae) adapt and impact biogeochemical cycling of elements in ecosystems of cold environments? What are the feedbacks between (sea)ice microbiology and climate (e.g. particle precursor gas fluxes, albedo changes)?
- How atmosphere-ocean interactions determine atmospheric chemistry
- Feedbacks between climate change and atmospheric chemistry that are determined by changes in the cryosphere
- How aerosols are formed and processed in cold regions
- How aerosols in cold regions act as cloud precursors and impact cloud properties
- How the ice core records can be used to understanding global and local environmental change
- How background composition/chemistry (trace gases and aerosols) in cold regions influences the fate of pollution (joint objective with PACES)
- How do physical processes in atmosphere (e.g. mixing, nucleation) and snow (e.g. metamorphism, radiative transfer) contribute to biogeochemical cycling of trace gases as well as particle formation and transport?

How to engage – sign up for & contribute content to the newsletter



Where to find out more

- Email: catch@igacproject.org
- Website: <http://www.igacproject.org/CATCH>
- Community meeting: <http://igacproject.org/2017CATCHWS>
- Community input survey:
<http://tinyurl.com/jd4t9sy>
- Draft mission & vision:
https://dl.dropboxusercontent.com/u/8798802/CATCH-mission-vision_v10.pdf